

Background Information

The geologic setting of the park is characterized by metamorphic basalt and igneous rocks that were created during tectonic activity, specifically the Taconic Orogeny approximately half a billion to 1.2 billion years ago. During the Taconic Orogeny, a chain of volcanoes collided with the ancient North American continental ridge producing a mountain range of the size seen today in the Swiss Alps. The area identified as the Piedmont is comprised of rocks that were buried miles beneath the rock forming the mountains. The rock visible in the Piedmont region was subjected to enormous heat from the mantle beneath, causing the rock to transform into the metamorphic rock we see today.

During the last 450 million years since the Tectonic Orogeny, stream and river networks carrying water from the higher elevations of the surrounding areas have eroded the mountains leaving the metamorphic rock to rebound as the pressure on the metamorphic rock caused by the mountains was removed through various processes over time. Since that time, rivers and streams have carried the erosional products, mostly sand, clay, and gravel, from the mountains onto the Atlantic Coastal Plain and continental shelf.

Sources

USGS/NPS Geology in the Parks Website, 2002, Barker, 1997, Collecting Rocks: USGS General Interest Publication; and USGS The Learning Web Website, 2001

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